

THIOKOL CORPORATION
Newtown, Pennsylvania 18940-0179
215-968-5911

Thiokol / EXECUTIVE OFFICES

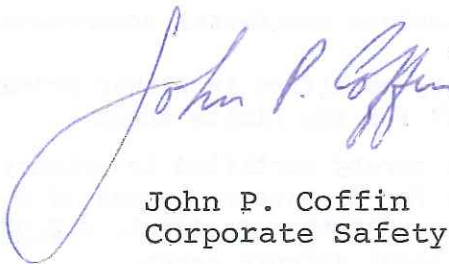
July 19, 1982

Regional Administrator
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

Gentlemen:

A certificate of liability insurance demonstrating liability coverage for sudden accidental occurrences as prescribed in 40 CFR 265.147 is attached.

Very truly yours,

A handwritten signature in blue ink, reading "John P. Coffin". The signature is fluid and cursive, with a large, sweeping initial "J".

John P. Coffin
Corporate Safety Manager

JPC:kak
Attachment

Hazardous Waste Facility Certificate of Liability Insurance

This certifies to:

U.S. ENVIRONMENTAL PROTECTION AGENCY
230 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

1. The Aetna Casualty and Surety Company, (The "Insurer"), of
151 Farmington Avenue
Hartford, Connecticut 06156

hereby certifies that it has issued liability insurance covering bodily injury and property damage to

THIOLKOL CORPORATION, (the "Insured"), of
(Name of Insured)

PO BOX 1000
(Address)

NEWTON, PA. 18940

in ^{connection} conjunction with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at

CARSTAB CORPORATION
(Name of Facility)

READING OHIO
(Address)

OHDO 00724138
(EPA Identification Number)

for ☒ (X) sudden accidental occurrences
☐ () non-sudden accidental occurrences

The insurance hereby certified is either primary or excess insurance, as indicated by "X" for the limits shown;

- (X) The Insurance hereby certified is primary and the Insurer shall not be liable for amounts in excess of \$ 1,000,000 per each occurrence/per each claim/per pollution incident, \$ 2,000,000 annual aggregate, exclusive of legal defense costs.
- () The insurance hereby certified is excess and the Insurer will not be liable for amounts in excess of \$ _____ per each occurrence/per each claim/per pollution incident, \$ _____ annual aggregate, exclusive of legal defense costs, in excess of the underlying limits of \$ _____ per each occurrence/per each claim/per pollution incident, \$ _____ annual aggregate, exclusive of legal defense costs.

The coverage is provided under policy number 04 GL 237659 SRA, issued on 5-1-82. The effective date of said policy is 5-1-82.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1.
- (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.
 - (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147(f) or 265.147(f).
 - (c) Whenever requested by a Regional Administrator of the U.S. Environmental Protection Agency (EPA), the Insurer agrees to furnish to the Regional Administrator a signed duplicate original of the policy and all endorsements.
 - (d) Cancellation of the insurance, whether by the Insurer or the Insured, will be effective only upon written notice and only after the expiration for sixty (60) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.
 - (e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

I hereby certify that the wording of this instrument is identical to the wording specified in 40 C FR 264.151(i) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines Insurer, in one or more States.


(Signature)

RJ HAGER, DIR CID NATIONAL ACCOUNTS
Name & Title of Authorized Representative
of Aetna Casualty & Surety Co.

151 FARMINGTON AVE HARTFORD, CT 06156
Address of Representative

ADDITIONAL LOCATION
VENTRON DIVISION
CHICAGO, ILL.

ILDO 96787049

THIOKOL CORPORATION
Newtown, Pennsylvania 18940-0179
215-968-5911

Thiokol / EXECUTIVE OFFICES
2 July 1982

Regional Administrator
Environmental Protection Agency - Region V
230 South Dearborn Street
Chicago, Illinois 60604

I am the chief financial officer of Thiokol Corporation, P.O. Box 1000, Newtown, PA 18940. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in Subpart H of 40 CFR Parts 264 and 265.

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:

		<u>Cost Estimates</u>	
		<u>Closure</u>	<u>Post-Closure Care</u>
WVD074968413	Specialty Chemicals Division Newell Plant P.O. Box E, Route 2 Newell, WV 26050	\$ 98,500	N/A
WAD020231536	Ventron Division Elma Plant P.O. Box 1224, Route 12 Elma, WA 98541	11,684	N/A

2. This firm guarantees, through the corporate guarantee specified in Subpart H of 40 CFR Parts 264 and 265, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:

Cont'd...

		<u>Cost Estimates</u>	
		<u>Closure</u>	<u>Post-Closure Care</u>
OHD000724138	Carstab Corporation West Street Cincinnati, OH 45215	\$ 86,950	N/A

3. In states where EPA is not administering the financial requirements of Subpart H of 40 CFR Parts 264 and 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:

		<u>Cost Estimates</u>	
		<u>Closure</u>	<u>Post-Closure Care</u>
MDD003067121	Elkton Division P.O. Box 241, Route 40 Elkton, MD 21921	\$ 5,240	N/A

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a state through the financial test or any other financial assurance mechanism specified in Subpart H of 40 CFR Parts 264 and 265 or equivalent or substantially equivalent state mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:

		<u>Cost Estimates</u>	
		<u>Closure</u>	<u>Post-Closure Care</u>
MAD001022375	Ventron Division Beverly Plant 12-14 Congress Street Beverly, MA 01915	\$ 2,845	N/A
MAD099199051	Ventron Division 154 Andover Street Danvers, MA 01923	\$ 20,425	N/A
MSD008186587	Specialty Chemicals Division Moss Point Plant P.O. Box 666 5724 Elder Ferry Road Moss Point, MS 39563	\$211,040	\$54,900

Cont'd...

		<u>Cost Estimates</u>	
		<u>Closure</u>	<u>Post-Closure Care</u>
ILD096787049	Ventron Division Chicago Plant 1645 S. Kilbourne Avenue Chicago, IL 60623	\$ 9,200	N/A
UTD009081357	Wasatch Division P.O. Box 524, Route U-83 Brigham City, UT 84302	\$ 37,300	\$45,000
CAD008334260	Dynachem Corporation P.O. Box 12047 2631 Michelle Drive Tustin, CA 92680	\$ 11,350	N/A

This firm is required to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on the Sunday closest to calendar year end. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended January 3, 1982.

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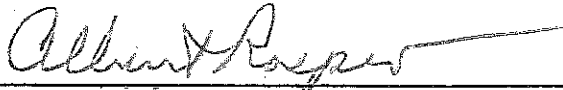
ALTERNATIVE I

1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the four paragraphs above)	\$ 594,434
*2. Total liabilities (if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4)	\$216,045,743
*3. Tangible net worth	\$214,704,463
*4. Net worth	\$251,685,461
*5. Current assets	\$242,620,959
*6. Current liabilities	\$124,395,849
7. Net working capital (line 5 minus line 6)	\$118,225,110
*8. The sum of net income plus depreciation, depletion, and amortization	\$ 61,707,808
*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	\$417,700,000

	Yes	No
10. Is line 3 at least \$10 million?	X	
11. Is line 3 at least 6 times line 1?	X	
12. Is line 7 at least 6 times line 1?	X	
*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14.		X
14. Is line 9 at least 6 times line 1?	X	
15. Is line 2 divided by line 4 less than 2.0?	X	
16. Is line 8 divided by line 2 greater than 0.1?	X	
17. Is line 5 divided by line 6 greater than 1.5?	X	

Continued...

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(f) as such regulations were constituted on the date shown immediately below.



Albert Roeper, Vice President/Finance

July 2, 1982

Enclosures: SEC Form 10K for 1981
Special Report from Independent CPA
Corporate Guarantee for Carstab Corporation

CORPORATE GUARANTEE FOR CLOSURE

Guarantee made this 2nd day of July 1982 by Thiokol Corporation, a business corporation organized under the laws of the State of Virginia, herein referred to as guarantor, to the United States Environmental Protection Agency (EPA), obligee, on behalf of our subsidiary, Carstab Corporation of West Street, Cincinnati, Ohio 45215.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 264.143(f), 264.145(f), 265.143(e), and 265.145(e).

2. Carstab Corporation owns or operates the following hazardous waste management facility covered by this guarantee:

<u>EPA I.D. #</u>	<u>Location</u>	<u>Closure or Post-Closure</u>
OHD000724138	Carstab Corporation West Street Cincinnati, Ohio 45215	Closure

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Subpart G of 40 CFR Parts 264 and 265 for the closure and post-closure care of facilities as identified above.

4. For value received from Carstab Corporation, guarantor guarantees to EPA that in the event that Carstab Corporation fails to perform closure of the above facility in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Subpart H of 40 CFR Parts 264 or 265, as applicable, in the name of Carstab Corporation in the amount of the current closure or post-closure cost estimates as specified in Subpart H of 40 CFR Parts 264 and 265.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the EPA Regional Administrator for the Region in which the facility is located and to Carstab Corporation that he intends to provide alternate financial assurance as specified in Subpart H of 40 CFR Parts 264 and 265, as applicable, in the name of Carstab Corporation. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless Carstab Corporation has done so.

6. The guarantor agrees to notify the EPA Regional Administrator by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Subpart H of 40 CFR Parts 264 and 265, as applicable, in the name of Carstab Corporation unless Carstab Corporation has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to 40 CFR Parts 264 or 265.

9. Guarantor agrees to remain bound under this guarantee for so long as Carstab Corporation must comply with the applicable financial assurance requirements of Subpart H of 40 CFR Parts 264 and 265 for the above listed facilities, except that guarantor may cancel his guarantee by sending notice by certified mail to the EPA Regional Administrator for the Region in which the facility is located and to Carstab Corporation, such cancellation to become effective no earlier than 120 days after receipt of such notice by both EPA and Carstab Corporation, as evidenced by the return receipts.

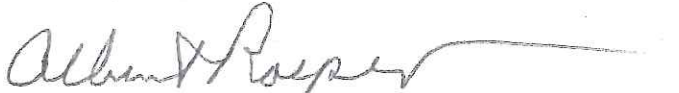
10. Guarantor agrees that if Carstab Corporation fails to provide alternate financial assurance as specified in Subpart H of 40 CFR Parts 264 and 265, as applicable, and obtain written approval of such assurance from the EPA Regional Administrator within 90 days after a notice of cancellation by the guarantor is received by an EPA Regional Administrator from guarantor, guarantor shall provide such alternate financial assurance in the name of Carstab Corporation.


11. Guarantor expressly waives notice of acceptance of this guarantee by the EPA or by Carstab Corporation. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plans and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 254.151(h) as such regulations were constituted on the date first above written.

Effective Date: 6 July 1982

Thiokol Corporation


Albert Roeper, Vice President/Finance

Sworn to and subscribed before me
this 2nd day of July A. D. 1982

Notary Public.

ANNE R. TIBERI, NOTARY PUBLIC
NEWTOWN TOWNSHIP, BUCKS COUNTY
MY COMMISSION EXPIRES OCT 2, 1984
Member, Pennsylvania Association of Notaries

ARTHUR YOUNG

ARTHUR YOUNG & COMPANY
520 BROAD STREET
NEWARK, NEW JERSEY 07102

(201) 268-2200

Thiokol Corporation
Newtown, Pennsylvania 18940

We have examined the consolidated financial statements of Thiokol Corporation for the year ended January 3, 1982, and have issued our report thereon dated February 12, 1982. Our examination was made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

At the request of Thiokol Corporation, we have compared the data marked with an asterisk at Alternative I in the July 2, 1982 letter (issued pursuant to Subpart H of 40CFR, Part 265.145) from Mr. Albert Roeper, Vice President-Finance and Treasurer of Thiokol Corporation, to the independently audited consolidated financial statements of Thiokol Corporation for the year ended January 3, 1982.

In connection with the procedure referred to in the preceding paragraph, no matters came to our attention that caused us to believe that the data referred to in such paragraph should be adjusted.

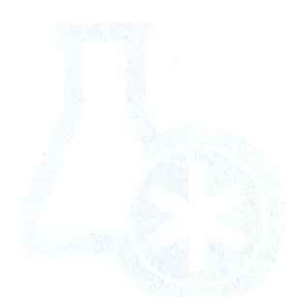
Arthur Young & Company

July 2, 1982

SEC FORM 10-K FOR 1981

Thiokol

AN INTERNATIONAL HIGH-TECHNOLOGY
COMPANY, A LEADING MANUFACTURER OF
SPECIALTY CHEMICAL PRODUCTS FOR INDUSTRY
AND SOLID ROCKET PROPULSION SYSTEMS
FOR DEFENSE AND SPACE.



SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549

FORM 10-K

Annual Report Pursuant to Section 13 or 15(d) of
the Securities Exchange Act of 1934

For the fiscal year ended January 3, 1982

Commission file number 1-7394

THIOKOL CORPORATION

(Exact name of registrant as specified in its charter)

VIRGINIA

(State of incorporation)

23-1910386

(I.R.S. Employer
Identification No.)

P. O. Box 1000

NEWTOWN-YARDLEY ROAD

ROUTE NO. 332, NEWTOWN, PENNSYLVANIA

(Address of principal executive offices)

18940-0179

(Zip Code)

Telephone number, including area code

215-968-5911

Securities registered pursuant to Section 12(b) of the Act:

Title of each class

Name of each exchange
on which registered

Common Stock, par value
\$1 per share

New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

The aggregate market value of voting stock held by nonaffiliates of the registrant is \$402,682,420 as of February 26, 1982.

At February 26, 1982, 11,505,212 shares of common stock, par value \$1, were outstanding.

Part I and Part II incorporate information by reference from the Annual Report to Stockholders for the fiscal year ended January 3, 1982 and the proxy statement for annual meeting of stockholders to be held on April 27, 1982. Part III incorporates by reference from the aforementioned proxy statement.

PART I

Item 1. Business

General Information

Thiokol Corporation was founded on December 21, 1928 in Kansas City, Missouri.

In January and May 1981 the company sold its Education and Training Division and Domestic and European trigger sprayer businesses. Additional information on the company's most recent acquisitions and dispositions of assets is included in Note 8 of the notes to the consolidated financial statements (pages 30 and 31) included in the 1981 Annual Report to Stockholders, which information is incorporated by reference.

Financial Information by Business Segment and Geographic Data

This information is included in the Ten-Year Comparative Summary of Financial Statistics (page 20) and Note 10 of the notes to the consolidated financial statements (pages 31 and 32) included in the 1981 Annual Report to Stockholders and is incorporated herein by reference.

Products and Services

General:

The company manufactures a wide range of products for government and industrial use and operates principally in two areas, government contracting and the manufacture and sale of specialty chemical products. A description of each business segment follows:

Government Systems:

Operations in Government Systems encompass propulsion and ordnance products and services performed principally under contracts and subcontracts with various U. S. Government agencies and other aerospace contractors.

Propulsion includes research, development and production of solid propellant rocket motor systems for missile and space vehicles. The company continued to maintain its leadership in development and production of solid propellant rocket motors through participation in all of the nation's major defense and space programs. Nineteen eighty-one was a record year for the company in the development and production of rocket motors. Four new propulsion systems entered production and six others are scheduled to begin production in 1982. The Space Shuttle's successful flights using Thiokol boosters, and new initiatives to modernize the nation's strategic defense improved the company's long-term business potential in all parts of the Triad--land, sea, and airborne deterrents.

A highlight of the year was the flawless performance of Thiokol's solid rocket motors (SRMs) during the April and November launches of the Space Shuttle. These boosters were the largest solid propellant motors ever flown and performed as designed. An economic requirement of this innovative Space Transportation System--reuse of the SRM case and nozzle components--was also demonstrated. The cases and nozzles recovered from the sea after both flights of Orbiter Columbia are being refurbished for use on future missions. Motors for the third launch scheduled for March

Products and Services (continued)

Government Systems: (continued)

1982 were delivered to Cape Canaveral in late 1981. Production of SRMs to support NASA's current flight schedule is continuing. Additional work to improve SRM performance and insure continued use of the motors into and beyond the 1990s is already underway. Nozzle and thrust characteristics are being modified to provide a 10% increase over current payload capability. An additional increase of 25% is planned by making motor cases of a strong, lightweight graphite fiber composite rather than the steel presently employed. This program is scheduled to begin in 1982.

Significant accomplishments were also achieved in the development and manufacture of propulsion systems for other space applications. Production of Castor IV strap-on motors for use on expendable launch vehicles, such as Delta, was at a record level. This effort will last until the Space Shuttle is fully operational. Work continued on the STAR series of high-performance motors employed in positioning satellites in orbit. An improved STAR 30 was qualified and two new versions of the STAR 37 entered qualification. The STAR 48 for the Air Force's Global Positioning Satellite will complete qualification in 1982. During the year a total of seventeen Thiokol STAR motors of nine different designs were flown, demonstrating the increasing use of these systems for the successful orbit insertion of military, scientific and commercial satellites.

Propulsion activity for ballistic missile systems also proceeded at a rapid pace in 1981. Production of the Trident I Submarine-Launched Ballistic Missile continued in a joint venture with Hercules Incorporated. This weapon system, to be produced throughout the 1980s, is designed for use in Trident and retrofitted Poseidon submarines. Late in the year, the joint venture was selected for advanced development of the first- and second-stage propulsion systems for the Trident II missile. The total program, including production, will last well into the 1990s, with Trident II missile scheduled for deployment in Trident submarines in late 1989. Thiokol was also selected to participate in the Phase I advanced development program for a new Post-Boost Control System for the Trident II. Work progressed on schedule on the first stage and ordnance initiation system for the MX Intercontinental Ballistic Missile. Four first-stage motors were successfully test fired and the critical design review of the flight test ordnance system was completed. The initial static test of a flight stage is scheduled for mid-1982 with the first MX flight planned for early 1983 followed by production later that year. A very significant event in 1981 was the selection of the company to design and demonstrate the propulsion system for the Low Altitude Ballistic Missile Defense System (LoAD). This award was the result of several years of extensive corporate-funded R&D effort. The Administration plans to make a decision in 1983-1984 concerning deployment of such a system to defend MX and Minuteman missile silos. If such a deployment decision is made, the LoAD propulsion system would provide significant sales potential to the company beginning in the mid-1980s. The Short Range Attack Missile (SRAM) motor verification program is progressing on schedule. Funding for retention of SRAM production capability is anticipated shortly. With initiation of the new B-1B bomber, SRAM propulsion effort is expected to increase in future years.

Products and Services (continued)

Government Systems: (continued)

Very significant progress was made during the year in tactical propulsion. Production of Harpoon, Patriot, and Reduced Smoke Maverick motors was initiated and will continue for several years. Qualification of the HARM and Reduced Smoke Sidewinder motors was completed; initial production of these systems, as well as Hellfire and the Standard Missile EX-70, will begin in 1982. Development continued on the high-performance motors for the Navy's Advanced Medium Range Standard Missile with flight-rating tests to be completed in 1982. Following an industry competition, Thiokol was selected to develop and produce the propulsion system for the Army's helicopter-launched Minimum Smoke Hellfire missile. This award marked the company's entry into the minimum-smoke propulsion market, a business segment which is expected to expand significantly throughout the 1980s.

In research and development, work proceeded on a very high-performance space motor for use in deploying Space Shuttle payloads. Other programs demonstrated the feasibility of large segmented graphite composite cases, advanced dual-chamber post-boost propulsion, and a ballistic missile interceptor propulsion system. Two low-cost, highly reliable thrust vector control systems for tactical ground, air and underwater launch propulsion were also demonstrated. Substantial progress was recorded in the area of minimum-smoke, high-energy, and very high- and very low-burning rate propellants, as well as in nonasbestos insulation, rocket energy management, improved gas generators, and infrared decoys.

The solid propulsion market in the United States is projected to grow from its record high of approximately \$900 million in 1981 to over \$1 billion in 1982 and to more than double that by 1989. Thiokol is well positioned with its technology and current program participation to continue as the number one supplier of solid propulsion systems through the 1980s and beyond.

Ordnance includes the development and production of air-dropped flares, ground-launched flares, special devices and conventional artillery munitions. Several new projectiles and flares entered high-volume production and offset an overall decline in the illuminating segment. The \$38 million government-funded modernization of the projectile manufacturing line was completed and volume production of improved 155mm projectiles was initiated. During the year, the Army selected the company to produce the two new 155mm rounds that will enter production in the 1983-84 time period. Growth in ordnance activity is anticipated for the next several years as the Department of Defense continues to replenish its supplies of conventional ordnance.

Specialty Chemicals:

Specialty Chemicals products and services include liquid polysulfide polymers, premixed additive concentrates, heat stabilizers for rigid polyvinyl chloride, dry film photoresists for printed circuit boards, radiation curable materials, contract manufacturing, sodium borohydride, lubricants and greases, screen filters, rubber and

Products and Services (continued)

Specialty Chemicals: (continued)

rubber chemicals, liquid resists for semiconductors, synthetic waxes, antioxidants, asphalt and petroleum additives, industrial biocides, fine chemicals and chemical intermediates, disc brake pads, electroless plating compounds, plasticizers, monomers and oligomers and sealant for insulating glass which is based on liquid polysulfide polymers produced by Thiokol.

The Specialty Chemicals Division's LP® liquid polysulfide polymers are a base ingredient in sealant compounds for use in insulating glass, building and engineered construction and in the aircraft, marine and automotive industries. Specialty products marketed include THIOKOL® polysulfide elastomers, low-temperature plasticizers, epoxy modifiers and hydrocarbon liquid polymers. These products are used by manufacturers in making a variety of molded, cast and extruded rubber parts, adhesives and coatings and solid rocket fuel. The Division also manufactures monomers and chemical intermediates which are employed in the manufacture of Dynachem's (a wholly owned subsidiary) dry film photopolymers and are sold to other companies for use in protective and decorative coatings and finishes for cans, woods and other substrates. The company retained leadership as a supplier of UV-curable oligomers and monomers for use in coatings in the fiber optics industry. Other UV-curable products are being used in coatings for floor coverings and in a new photographic print application being readied for market introduction. Polysulfide compositions are used as curable bases for marine, automotive, aircraft construction and insulating glass sealants as well as a solid propellant rocket binder, liner for gasoline and paint spray hose, and an agent for molding dentures. The Division also markets its own brand of insulating glass sealant now being formulated and packaged in a new manufacturing facility completed in 1981 and located adjacent to the company's polysulfide production plant in Moss Point, Mississippi. The Specialty Chemicals Division also manufactures complex organic chemical compounds and intermediates for use in the manufacture of agricultural, pharmaceutical and cosmetic chemicals. Distribution of the above products is principally by direct sale to manufacturers in the U. S. and by sales agents in foreign markets. Distribution in Canada and the United Kingdom is through wholly owned subsidiaries. Liquid polysulfide polymers are also manufactured and sold in Japan by Toray Thiokol Co. Ltd., a 45%-owned affiliate of the company.

Ventron Division manufactures sodium borohydride, antimicrobials for plastics, research chemicals, proprietary performance chemicals, hydride chemicals and metal powders. At two domestic plant locations, Ventron produces over 90% of the free world's requirements for sodium borohydride. The use of BOROL®, the proprietary formulation of sodium borohydride used to produce sodium hydrosulfite, a bleaching chemical for newsprint production, continued to expand. Paper mills which started to use the Borol process in 1980 in the United States, Canada, and Europe added to volume and market share in 1981, and commitments were received from customers for new installations scheduled through 1983. Sales of sodium borohydride in specialty markets advanced strongly from the 1980 level as a direct result of customer recognition of the material's superior properties. New installations were commercialized for process stream purification and

Products and Services (continued)

Specialty Chemicals: (continued)

the use of the material to recover heavy and precious metals from waste streams continued to increase. Sales of fine chemicals, at a low level for most of the year, rebounded in the fourth quarter in both domestic and European markets. The use of high purity research chemicals for the semiconductor segment of the electronics industry grew significantly. Sales of industrial biocides, incorporated in plastics to protect against microbial attack, increased in the North American and European markets. The use of antimicrobials in single-ply roofing membranes, encouraging response to a new compound used in pipe insulation wrap, and use of a Thiokol biocide to help prevent odor and germ buildup in kitchen trash bags, contributed to the expansion. These and other applications, plus a new biocide system currently being evaluated, are expected to further the growth of this segment in 1982. Distribution of the products, except research chemicals, is principally by direct sales to users in the U. S. and foreign markets. Ventron's research chemicals are marketed to industrial and institutional laboratories principally by means of an internationally distributed catalog.

Dynachem Corporation, a wholly owned subsidiary, manufactures dry film and liquid photoresists with related developers and strippers, screen resists, ultraviolet-curable inks and coatings, metal finishing compounds including electroless copper plating solutions and process equipment which are used in the manufacture of both printed circuit boards and semiconductor devices. New radiation-curable materials, a high level of technical service, and manufacturing improvements which enhanced quality and yields combined to make 1981 an excellent year in this product area. Major trends anticipated by the company in printed circuit board requirements--such as finer, more closely spaced lines, and increased usage of semiaqueous dry film photoresists--were supported by products introduced in 1980. Each contributed to significant sales growth in 1981. A family of dry film solder masks produced for use with copper substrates was expanded to accommodate applications to tin and lead surfaces. The new totally aqueous product provides improved adhesion as well as excellent film flexibility. In addition, highly successful field tests were completed on two electroless copper systems for medium or heavy deposits on substrates of a bright, ductile layer of copper fully compatible with Thiokol dry film photoresists. Spent solutions of the materials are easily treated for discharge, a feature of growing interest to the industry where waste treatment is of major concern. Full commercialization will begin in 1982. Increased market penetration was realized with the new line of liquid photoresists and auxiliary products for the semiconductor industry. These products, introduced in 1980, are licensed from Tokyo Ohka Kogyo Co. Ltd., and initially were imported from Japan for resale. In 1981, the company began production of both positive and negative working resists and has been able to discontinue imports. Customer evaluations have verified the outstanding quality of these microresists and growth in this market is expected to be outstanding over the next several years. Construction of a new \$10 million facility in Moss Point, Mississippi, for the manufacture of UV-curable materials and electroless copper systems was begun with start-up scheduled for mid-1982. Distribution

Products and Services (continued)

Specialty Chemicals: (continued)

of products is principally by direct sales to manufacturers in the U. S. and Western Europe and by a network of distributors in the Far East.

Southwest Chemical Services Incorporated, a wholly owned subsidiary, is the leading producer of premixed additive concentrates for use in the manufacture of polyolefin plastic resins. It also fabricates wire screen filters employed in plastic extruding equipment and markets a line of lubricants and greases. Domestic demand for plastic additive concentrates, used to impart various performance characteristics to polyolefin resins, was strong for the first half of 1981. New plant capacity brought on stream in 1980 enabled the company to satisfy a surge in orders for high-volume production items. With a downturn in the polyolefin industry at midyear, operations were adapted to process a larger variety of resins in smaller quantities. An exception to the slowdown in concentrate demand was in the area of carbon black dispersions, which were produced in high volume throughout 1981 for the wire and cable and pressure pipe markets. In custom compounding, overall volume for the year increased 27% as a result of the further penetration of markets for high-density pipe compounds and linear low-density polyethylene for film. In Europe, the company maintained its market share in custom compounding despite the economic downturn as a result of customer preference for quality products which also command higher service fees. Manufacturing improvements which increased production efficiencies and capacity also contributed to improved margins in the European operations. Efforts to expand sales in African, Middle and Far Eastern, and European markets were implemented through an enlarged dealer organization. Demand for specially formulated automotive lubricants and greases declined during the year while industrial uses of the materials expanded slightly. The net result was increased business in this area. For most of 1981, extruder screen operations maintained the excellent levels achieved over the past several years. The plastics industry slowdown, however, impacted the extrusion business and screen sales declined. New equipment has been purchased in support of an effort to expand the application of the company's screen system to other areas. Distribution of Southwest's products is made directly to customers and through distributors in the U. S. and Europe.

Carstab Corporation, a wholly owned subsidiary, manufactures heat and lubricating stabilizers used in the processing of rigid polyvinyl chloride, synthetic waxes, asphalt, polyolefin and petroleum additives, catalysts and curing agents. The major market for the company's line of heat stabilizers used in the processing of rigid polyvinyl chloride (PVC) is in the construction industry. The company has minimized the effects of the decline in this industry--and expanded its market share--by providing customers with new products which afford superior performance. One of the most enthusiastically received products was a lubricating stabilizer for use in the extrusion of PVC water and sewer pipe and underground conduits. This new development incorporates in one package the desired heat stabilization and lubrication properties heretofore obtained only by the use of three or more separate additives. It simplifies inventory, handling, and processing for Thiokol's customers

Products and Services (continued)

Specialty Chemicals: (continued)

and contributes to a more uniform wall thickness at higher rate of output. As a result of these advantages, sales in this area doubled over the previous year. Many new accounts were secured, and large scale field trials with prospective customers were in progress at year end. Another important market for rigid PVC in the construction area is in residential siding and window profiles. During the year a one-package lubricating stabilizer was also developed for this use. This system has been favorably evaluated by processors and the sales potential for 1982 is excellent. In addition, a new line of low-cost liquid tin heat stabilizers, affording properties comparable to those imparted by higher priced stabilizers, was very well received by PVC pipe processors. Another new heat stabilizer enabled the company to increase its share of the PVC bottle market by 50%. In the area of asphalt additives, business potential was strengthened by the introduction of two new products which are now being used in twelve states. The effectiveness of the antistripping agents in extending road life is being evaluated in test strips by four states in widely separated geographical areas. Data obtained in this study will be correlated with performance results in a company-designed laboratory and will be utilized to further improve product characteristics. The market for these additives is substantial because of extensive highway deterioration across the country. Distribution of Carstab's products is made directly to customers in the U. S. and through salesmen and agents in Europe and the Far East.

Friction Division manufactures disc brake pads and drum brake linings. Shipments of automotive disc brake pads to the original equipment market increased slightly in 1981. The company's share of business with Ford Motor Company should increase as a result of its participation as sole-source supplier for Ford's next generation small car. Tooling is underway for the production of disc brake pads for this vehicle line beginning in 1982. A nonasbestos, semimetallic pad was introduced for use in the aftermarket and performed well. In a development program utilizing Ford trucks and passenger cars, a nonasbestos front disc and rear drum lining were tested in Detroit and Los Angeles city traffic. The materials are being further evaluated in Minnesota under cold weather conditions by a fleet of vehicles. Replacement brake pads are sold mainly to manufacturers who, in turn, furnish brake pad assemblies to distributors and jobbers.

In October, following the recision of the National Highway Traffic Safety Administration's requirement concerning automotive passive restraint systems, the company began phasing out its activities in the production of inflator units for these devices. This action had no significant adverse financial impact. No further activity in this area is expected in the near future.

Only a small portion of the Specialty Chemicals business segment is considered to be seasonal-type business.

Raw Materials

All raw materials essential to the business of the company are normally readily available in the open market. The company is not dependent on a single supplier for any materials essential to its business. The company's propulsion and ordnance programs carry government priorities which help to assure that raw materials for this business segment will be readily available.

Patents and Other Intangibles

The company conducts a comprehensive research and development program to enable it to maintain its competitive position. Activities include development of new products, improvement of present products and development of improved manufacturing processes. Research and development work is also carried out for the Department of Defense, the National Aeronautics and Space Administration and other government agencies along lines related to some of the products and processes of the company.

It is the company's practice to apply for patents on promising new products and processes. The company owns both domestic and foreign patents and numerous patent applications are filed each year on new developments. The company has approximately 2,300 patents which expire on varying dates through the year 1999.

The company has many patents in the Government Systems field, under many of which the Government has royalty-free licenses. The company's Government Systems divisions are continually engaged in research activities both under government contract and under the company's independent research and development program.

Specialty Chemicals Division's basic patents covering the solid polysulfide polymer invented in 1928 have expired, but the company, through research and development, has been able to cover by new patents, commercially important modifications, variations, applications and processes with respect to making such polymers. The company believes that its present position in this field is dependent not only on patents it holds, but also in the technical expertise, know-how and new processes which it has been able to develop. In the photochemicals business, the company has patents, patent applications and inventions covering many different products and conducts an active research and development effort. Ventron Division does research in uses for sodium borohydride as an industrial reducing agent and applications for industrial biocides and microbial agents. Carstab Corporation is engaged in research to investigate new products for the stabilization and protection of plastic products, as well as for use of asphalt additives and chemical processing and has various patents relating primarily to plastic additives and process improvements.

The company has many U. S. and foreign trademarks which are generally renewable while the mark is in use.

Working Capital

This information is included in the Annual Report to Stockholders in the Financial Review on pages 18 and 19 and is incorporated herein by reference.

Significant Customers

A substantial portion of the company's business in the Government Systems area is under contracts with various U. S. Government agencies or subcontracts with suppliers to the U. S. Government. Such contracts and subcontracts are by their terms subject to termination by the Government or the prime contractor either for convenience or default. The loss of all such business, while not expected, would have a materially adverse effect on the company's operations.

Profitable growth through planned diversification and internal development has helped minimize the company's dependence on any one market or customer.

Backlog

Incorporated by reference from the 1981 Annual Report to Stockholders, page 17.

Renegotiation of Profits or Termination of Contracts

For information pertaining to U. S. Government contracts and subcontracts, see Note 2 of notes to consolidated financial statements in the 1981 Annual Report to Stockholders, pages 27 and 28.

Competition

The company continues to be the leading domestic producer of solid propellant rocket motors and illuminating devices. The solid propellant rocket motor market is primarily with the federal government and some of the considerations in the award of contracts are technical performance, quality, reliability, price, depth and capabilities of personnel and adequacy of facilities. While the market for nonilluminating ordnance devices and illuminating flares is highly competitive, the company is currently the only government-qualified producer of 60mm, 81mm, 4.2", 105mm and 155mm illuminating projectiles and cartridges; the LUU2/4 series flares; M110, M142 and M74 simulators; M112 demolition block, M183 demolition kit and the M692/M731 HE 155mm projectile.

Thiokol is the only producer in the U. S. of polysulfide polymers. The company does not know of any other material possessing all of the unique properties of its polymers. However, in certain applications, there is competition from a variety of dissimilar materials. The main competing products in the sealant compound area are urethane, silicone, butyl and mercapto-polyether compounds which are produced by many manufacturers.

All other areas of the Specialty Chemicals Division's business are highly competitive. The company depends on its ability to provide high quality products and response to demand for products which are based on the company's technical know-how, quality control and service, including prompt delivery. The principal competitive factors are price, performance and technical service.

Competition (continued)

Ventron Divison has over 90% of the world's capacity to produce sodium borohydride and is the world leader in this field. There are a few competitors in the field for antimicrobials used in plastic and for research chemicals. Ventron has a major portion of the antimicrobial and inorganic research chemical markets. There is very little competition in the performance chemical, hydride chemical and specialty metal powder lines. With respect to the various products of Ventron, the principal competitive factors are performance, price and service to customers.

Dynachem Corporation produces and markets proprietary materials used in the manufacture of printed circuits in the U. S. and abroad. The technology is rapidly advancing and competition is keen. DuPont is the major competitor in dry film photopolymers in the U. S. and foreign markets. There are several suppliers of electroless copper in the U. S. and European markets. The principal competitive factors are product performance, technical assistance and service to customers and price.

All areas of Southwest's business are highly competitive. The company depends on its ability to provide quality compounding and dispersion services more economically than its customers can for themselves. Competition for the services is based upon technical know-how, quality control and service, including prompt delivery. The company also competes with a number of independent producers of wire screen filters and its relative market position is dependent on price, delivery, customized products and production efficiency. Its lubricant business is highly competitive and is a minor factor in the industry.

All areas of Carstab's business are highly competitive. In its proprietary line of organotin heat stabilizers designed for use in the processing of rigid PVC, Carstab has a substantial part of the market of which there are six major suppliers to the rigid PVC industry. Other product lines used by the rigid PVC industry include lubricating stabilizers and synthetic waxes. The UV absorbers and antioxidants, used by the polyolefin industry, are also sold by four competitors. There are five major asphalt additive suppliers and numerous manufacturers of oil additives. The major competitive factors are price, service and product performance.

The brake pad and drum lining market is highly competitive. Competition is primarily from five large manufacturers with the principal considerations being quality and price.

Research and Development

The expense incurred on company-sponsored research and development activities related to new products or services and the improvement of existing products or services for continuing operations was \$12.5 million, \$11.4 million, and \$8.9 million in 1981, 1980, and 1979, respectively, while the amount spent during the same periods on such effort which was customer-sponsored (primarily U. S. Government funded) was approximately \$179.4 million, \$142.8 million, and \$100.0 million, respectively.

Environmental Matters

The company believes that compliance with federal, state and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment and particular environmental requirements which may be imposed with respect to its facilities, will not have a material effect upon earnings and competitive position of the company or its subsidiaries. Capital expenditures related to this area were \$1.8 million for 1981 and are estimated at \$3.2 million for 1982. For additional information regarding environmental matters see Item 3, Legal Proceedings.

Employees

The number of employees of the company for continuing operations at January 3, 1982 was 8,889 compared to 8,808 at December 28, 1980.

Financial Information About Foreign and Domestic Operations and Export Sales

This information is included in Note 10 of the notes to the consolidated financial statements in the Annual Report to Stockholders on pages 31 and 32 and is incorporated herein by reference. The company does not believe that its foreign business involves a substantially greater risk than its domestic business.

Item 2. Properties

A summary of principal plant locations follows:

Location	Land (Acres)			Buildings (Square Feet)			Expiration Year of Leases of Property
	Company	Owned		Company	Owned		
		Government	Leased		Government	Leased	
<u>Government Systems</u>							
Government Systems Headquarters							
Ogden, Utah	17	-	-	21,190	-	-	-
Propulsion							
Elkton, Maryland	449	-	-	356,132	-	-	-
Huntsville, Alabama	-	1,022	-	-	617,900	-	1983
Brigham City, Utah	17,863	1,515	-	964,647	549,706	52,088	1991
Clearfield, Utah	-	-	-	-	-	240,000	-
Ordnance							
Marshall, Texas	-	8,493	-	-	1,408,006	-	-
Minden, Louisiana	-	14,974	-	-	2,730,717	-	-
Ogden, Utah	3	-	-	67,000	-	-	-
<u>Specialty Chemicals</u>							
Moss Point, Mississippi							
Trenton, New Jersey	433	-	-	239,010	-	-	1984
LaPorte, Texas	27	3	-	75,000	-	104,600	-
Newell, West Virginia	29	-	-	67,188	-	-	-
Tustin, California	15	-	-	23,000	-	-	-
Woburn, Massachusetts	7	-	-	126,000	-	-	1984
Manchester, England	-	-	-	-	-	53,300	-
Warrington, England	1	-	-	16,200	-	-	-
Beverly, Massachusetts	-	-	4	57,000	-	-	2105
Danvers, Massachusetts	3	-	-	58,000	-	-	-
Chicago, Illinois	66	-	-	120,615	-	-	-
Elma, Washington	5	-	-	37,600	-	-	-
Seabrook, Texas	27	-	-	24,320	-	-	-
Pepinster, Belgium	18	-	-	100,000	-	-	-
Houston, Texas	7	-	-	141,666	-	-	-
Berkeley Heights, New Jersey	6	-	-	35,525	-	7,202	1986
Nessonvaux, Belgium	2	-	-	27,900	-	-	-
Crockett, Texas	1	-	-	29,934	-	-	-
Deer Park, Texas	45	-	-	64,600	-	-	-
St. Catharines, Canada	40	-	-	63,000	-	-	-
Reading, Ohio	-	-	-	-	-	7,500	1984
	32	-	-	143,700	-	25,300	1983

Item 2. Properties (continued)

The company believes that its facilities are ample for its operations as presently constituted and that it owns enough property for future expansion which may be required with respect to its operations. The company believes that the buildings and other improvements at the above facilities are of good construction and in good repair and are suitable for the type of operation conducted at each location.

Item 3. Legal Proceedings

New Jersey v. Ventron Corporation, et al, Superior Court of Bergen County, New Jersey, instituted on March 31, 1976. In this litigation the New Jersey Department of Environmental Protection alleged that hazardous substances were being discharged from property previously owned by a Ventron subsidiary in violation of state environmental laws and common law. On August 27, 1979, after a 55-day trial, the court held Ventron (a subsidiary acquired in 1976 and merged into the company in 1979) and one of its co-defendants, Velsicol Corporation, each severally liable for one half of the expense of removal of mercury pollution found to exist in Berry's Creek, which runs adjacent to such property. The property was previously the site of a mercury processing plant operated by the Ventron subsidiary from 1968 to 1974 and by other defendants prior to that time. The court also required Ventron and Velsicol to post bonds of \$1 million each to secure payment of future expenses, if any, to monitor and, if necessary, to abate subsequent leaching of mercury pollutants from the site into the creek. In addition, the court found that when the site was sold in 1974, Ventron did not fully disclose its condition to the purchasers (Wolfs, who are professional real estate developers and additional co-defendants in the action), and held as a consequence that the company must reimburse such purchasers for the expense of pollution control measures already taken at the site and for the expense of litigation. The court subsequently approved, for purposes of filing with the U.S. Army Corps of Engineers ("Corps"), a plan proposed by the State for cleanup of the creek. The State's plan provides for the dredging of an estimated 175,000 cubic yards of allegedly contaminated sediment from approximately 12,000 linear feet of the creek bed. Pursuant to federal permitting procedures, the Corps must rule on the appropriateness of the State's clean-up plan. The company is actively participating in the Corps proceedings and, on the basis of preliminary findings of hydrogeological consultants retained by the company, has filed comments challenging the plan's efficacy and raising serious questions concerning adverse health and environmental consequences that might be expected if the plan were approved by the Corps. In December 1981, the New Jersey Superior Court, Appellate Division, affirmed the lower court's decision, but modified the same to hold the company and Velsicol each jointly and severally liable for the full cost of any remedial action that might ultimately be deemed necessary; to approve the retroactive application of environmental legislation enacted during the pendency of the case; to remove certain limitations on liability which had been afforded the company and Velsicol by the lower court; and to require the company to pay certain damages to the Wolfs in addition to those previously found by the lower court. Both the company and Velsicol have filed petitions for certification with the New Jersey Supreme Court seeking review of the adverse ruling of the Appellate Division. The company does not believe that its business or financial condition will be materially affected by the outcome of this case and related proceedings.

Item 3. Legal Proceedings (continued)

California v. Stankevich, et al, including Dynachem Corporation, Superior Court of the State of California for the County of Los Angeles, instituted on May 6, 1981. This litigation involves an alleged hazardous chemical waste disposal site, commonly known as the General Disposal Site, located in Santa Fe Springs, California. The plaintiff is the California Department of Health Services, and defendants are the owners and past owners of the site, as well as various industrial concerns, including Dynachem Corporation, a wholly owned subsidiary, which the State alleges deposited hazardous chemical wastes on the site in question. The State seeks to have defendants clean up the property and an injunction prohibiting its further use as a disposal site. The company believes that Dynachem Corporation has valid defenses to the State's claims, and further that the outcome of such proceedings will have no material effect on the company's business or financial condition.

Ohio v. Georgeoff, et al, including Thiokol Corporation, United States District Court for the Northern District of Ohio, Eastern Division, instituted on October 7, 1981. This litigation involves an abandoned chemical waste disposal site in Deerfield Township, Portage County, Ohio. The plaintiff is the State of Ohio; the defendants are identified in the complaint as past and present owners or operators of the disposal site, as well as generators and transporters of hazardous substances to the site. The company is alleged to have generated a portion of such waste at its Newell, West Virginia plant during 1975-77. The State seeks damages in the amount of \$9,930,500 for cleanup of the site, together with other sums and related relief. The company and its waste disposal contractor have filed cross claims against each other seeking indemnity from liability and expenses resulting from the case. The company believes that it has valid defenses to the State's claims, and a right to indemnity against the waste disposal contractor and others for expenditures pursuant to this litigation. The company further believes that the outcome of such proceedings will have no material effect on its business or financial condition.

Miscellaneous environmental proceedings. The company believes that various governmental authorities may be contemplating the institution of administrative or judicial proceedings against it alleging violation of federal, state or local provisions regulating the discharge of materials into the environment. In six potential proceedings, the primary issue is the company's liability, if any, for past disposal of chemical wastes from plants now or formerly operated by the company or its subsidiaries in a manner allegedly in violation of the law. In one potential proceeding, the general issue is whether gaseous emissions from a plant presently operated by a subsidiary of the company violate applicable air quality standards. If any of such proceedings were instituted, the company believes that it has valid defenses to each and further that the outcome of such proceedings would have no material effect on its business or financial condition.

Item 4. Security Ownership of Certain Beneficial Owners and Management

Incorporated herein by reference from the company's proxy statement for the annual meeting of stockholders to be held on April 27, 1982, pages 1 and 2.

Executive Officers of The Registrant

<u>Name and Age</u>	<u>Position</u>	<u>Background and Positions Held During Last Five Years</u>
Robert E. Davis (50)	Chairman of the Board and President	Chairman of the Board since November 1977. President since December 1970. Appointed Chief Operating Officer in December 1970, also elected to the Board of Directors. Term expires in 1982. Assumed the responsibilities of Chief Executive Officer in November 1973. Joined the company in 1958 and has been an officer since July 1964.
<u>Group Vice Presidents</u>		
James M. Stone (63)	Government Systems Operations	Joined the company in 1960, holding various positions before being named Government Systems Group Vice President in October 1975. Officer since January 1969.
S. Jay Stewart (43)	Chemical Operations	Joined the company when Thiokol purchased Ventron Corporation in 1976. Appointed Ventron's General Manager in July 1977. Appointed President of Dynachem Corporation, a wholly owned subsidiary, in July 1979. Appointed an officer and named Chemical Group Vice President in February 1982.
<u>Vice Presidents</u>		
Antonio L. Savoca (58)	General Manager, Wasatch Division	Joined the company in 1963, holding various positions at Wasatch before being named General Manager and Vice President in July 1974. Officer since July 1974.
John H. Goodloe (55)	General Manager, Huntsville Division	Joined the company in 1953, holding various positions at Huntsville before being named General Manager in 1964. Appointed a Vice President and officer in May 1969.
<u>Corporate Staff Officers</u>		
Albert P. Roeper (65)	Vice President-Finance and Treasurer	Vice President-Finance since January 1969 and Treasurer since September 1965. Elected to Board of Directors in 1969. Term expires in 1984. Joined the company in 1962 and has been an officer since September 1965.

Executive Officers of the Registrant (continued)

<u>Name and Age</u>	<u>Position</u>	<u>Background and Positions Held During Last Five Years</u>
<u>Corporate Staff Officers (continued)</u>		
Ralph N. Thompson (64)	Senior Staff Vice President	Joined the company in January 1974 as General Manager of Chemical Division. Appointed an officer and named Chemical Group Vice President in May 1976. Named senior staff Vice President in February 1982.
Bruce Key (60)	Vice President-Legal and Secretary	Vice President-Legal since May 1971 and Secretary since January 1969. Joined the company in 1962 and has been an officer since April 1966.
Frank J. Cunnane (63)	Vice President- Industrial Relations	Vice President since May 1971. Joined the company in 1956, holding various positions in personnel administration before being named Vice President-Industrial Relations and an officer in May 1971.
George J. Donovan (46)	Vice President- Corporate Marketing	Joined the company in 1956, holding various positions in research, contracts and marketing before being named Vice President-Corporate Marketing and an officer in January 1977.
Edward R. Kearney (50)	Vice President- Corporate Relations and Development	Joined the company in August 1958, holding various positions before being named General Products Group Vice President in April 1974. Appointed Vice President, Corporate Relations and Development in February 1981. Officer since April 1974.
James R. Stanley (50)	Assistant Secretary	Joined the company in 1971 as Director-Legal. Also appointed Assistant Secretary and an officer in July 1976.
James H. McLean (47)	Assistant Treasurer	Joined the company in 1975 as Assistant to the Treasurer. Appointed Assistant Treasurer and an officer in April 1978.
Thomas F. McDevitt (42)	Controller	Joined the company in 1961, holding various positions at Corporate Office before being named Controller in June 1976. Appointed an officer in April 1977.

Executive Officers of the Registrant (continued)

There are no family relationships between any of the above named officers.

There are no arrangements or understandings between the above named persons and any other persons pursuant to which he was selected as an officer.

PART II

Item 5. Market for the Registrant's Common Stock and Related Security Holder Matters

Incorporated by reference from the 1981 Annual Report to Stockholders, pages 1, 33 and 36.

Presently, the company expects that dividends will continue to be paid in the future.

Item 6. Selected Financial Data

Incorporated by reference from the 1981 Annual Report to Stockholders, pages 20 and 21, and 33 through 35.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Incorporated by reference from the 1981 Annual Report to Stockholders in the Financial Review, pages 17 through 19.

Item 8. Financial Statements and Supplementary Data

Consolidated financial statements of the company at January 3, 1982 and December 28, 1980 and for each of the three years in the period ended January 3, 1982 and the auditor's report thereon, and the company's unaudited quarterly financial data for the two-year period ended January 3, 1982 and unaudited information on the effects of inflation and changing prices are incorporated by reference from the 1981 Annual Report to Stockholders, pages 22 through 35.

PART III

Item 9. Directors and Executive Officers

Incorporated by reference from the company's proxy statement for the annual meeting of stockholders to be held on April 27, 1982, pages 2 through 4.

Information regarding the executive officers is included in Part I.

Item 10. Management Remuneration and Transactions

Incorporated by reference from the company's proxy statement for the annual meeting of stockholders to be held on April 27, 1982, pages 4 through 11.

PART IV

Item 11. Exhibits, Financial Statement Schedules and Reports on Form 8-K

(a) 1. and 2. Financial statements and schedules

The financial statements and schedules listed in the accompanying index to consolidated financial statements are filed as part of this annual report.

3. Exhibits

The exhibits listed in the accompanying index to exhibits are filed as part of this annual report.

(b) Reports on Form 8-K

No Form 8-K was required to be filed during the fourth quarter ended January 3, 1982.

Item 11. Exhibits, Financial Statement Schedules and Reports on Form 8-K (continued)

(a) 1. and 2. Index to Consolidated Financial Statements and Financial Statement Schedules

	<u>Form 10-K</u>	<u>Annual Report to Stockholders (Page)</u>
Consolidated balance sheet at January 3, 1982 and December 28, 1980		22 - 23
Consolidated statement of income and retained earnings for each of the three fiscal years in the period ended January 3, 1982		24
Consolidated statement of changes in financial position for each of the three fiscal years in the period ended January 3, 1982		25
Notes to consolidated financial statements		26 - 32
Supplementary Financial Data: Quarterly Financial Data (Unaudited) Information on the Effects of Inflation and Changing Prices (Unaudited)		32 - 33 33 - 35
Report of Certified Public Accountants		35
Consent of Certified Public Accountants	20	
Consolidated schedules for each of the three fiscal years in the period ended January 3, 1982		
I - Marketable securities - short-term investments (Two years only)	21 - 22	
V - Property, plant and equipment	23 - 25	
VI - Accumulated depreciation and amortization of property, plant and equipment	26 - 28	
VIII - Valuation and qualifying accounts	29	
X - Supplementary income statement information	30	

Item 11. Exhibits, Financial Statement Schedules and Reports on Form 8-K (continued)

All other schedules have been omitted since the required information is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements or the notes thereto.

The consolidated financial statements and supplementary information listed in the above index, which are included in the Annual Report to Stockholders for the fiscal year ended January 3, 1982, are hereby incorporated by reference.

CONSENT OF CERTIFIED PUBLIC ACCOUNTANTS

We consent to the incorporation by reference in this Annual Report on Form 10-K of Thiokol Corporation of our report dated February 12, 1982 included in the 1981 Annual Report to Stockholders.

We also consent to the addition of the consolidated schedules listed in the accompanying index to consolidated financial statements and financial statement schedules, to the financial statements covered by our report dated February 12, 1982 incorporated herein by reference; and to the incorporation by reference in the Registration Statement Form S-8 No. 2-59069 pertaining to the Executive Stock Incentive Plan of Thiokol Corporation and in the related Prospectus of our report dated February 12, 1982 with respect to the consolidated financial statements and financial statement schedules of Thiokol Corporation included (or incorporated by reference) in this Annual Report (Form 10-K) for the year ended January 3, 1982.

ARTHUR YOUNG & COMPANY
Newark, New Jersey
February 12, 1982

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE I - MARKETABLE SECURITIES - SHORT-TERM INVESTMENTS
At January 3, 1982

Name of issuer and title of each issue	Number of shares or units - principal amount of bonds and notes	Cost of each issue	Market value of each issue at balance sheet date	Amount at which each portfolio of equity security issues and each other security issue carried in the balance sheet
State and Municipal Securities - U.S.				
State of Michigan	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000
State of Washington	950,000	950,000	953,214	953,214
Spring Grove Area School District - Pennsylvania	450,000	450,237	468,881	468,881
Belle Vernon Area School District - Pennsylvania	300,000	300,167	311,250	311,250
Penn Cambria School District - Pennsylvania	443,000	444,947	461,734	461,734
Philadelphia Area School District - Pennsylvania	2,000,000	2,020,071	2,090,117	2,090,117
South East Delco School District - Pennsylvania	645,000	645,639	666,601	666,601
Portage Area School District - Pennsylvania	275,000	274,829	283,698	283,698
Malden, Massachusetts	400,000	406,400	422,000	422,000
Fitchburg, Massachusetts	450,000	452,531	468,984	468,984
Brockton, Massachusetts	500,000	503,958	522,641	522,641
Brockton, Massachusetts	1,850,000	1,864,582	1,933,397	1,933,397
Somerville, Massachusetts	225,000	227,505	235,878	235,878
Commonwealth of Pennsylvania	2,000,000	2,004,439	2,066,947	2,066,947
City of New York	1,000,000	1,000,000	1,031,986	1,031,986
State of Michigan	2,000,000	2,022,940	2,098,676	2,098,676
State of Michigan	2,000,000	2,024,260	2,099,329	2,099,329
Milford Exempt School District - Ohio	2,085,000	2,127,970	2,183,730	2,183,730
Lowell, Massachusetts	1,000,000	1,009,122	1,036,380	1,036,380
Lackawanna, New York	2,000,000	2,006,210	2,057,270	2,057,270
Binghamton School District - ..	1 000 000	1,005,590	1,020,016	1,020,016

THIKOL CORPORATION AND SUBSIDIARIES
SCHEDULE I - MARKETABLE SECURITIES - SHORT-TERM INVESTMENTS
At December 28, 1980

Name of issuer and title of each issue	Number of shares or units - principal amount of bonds and notes	Cost of each issue	Market value of each issue at balance sheet date	Amount at which each portfolio of equity security issues and each other security issue carried in the balance sheet
<u>Eurodollar Certificates of Deposit and Notes</u>				
Mitsui Bank	\$ 1,000,000	\$ 1,000,000	\$ 1,043,604	\$ 1,043,604
Midland International Finance Services	1,000,000	1,000,000	1,043,615	1,043,615
Offshore Mining Co. Ltd. - New Zealand	1,000,000	1,000,000	1,043,325	1,043,325
Sumitomo Bank Ltd.	3,000,000	3,000,000	3,044,078	3,044,078
Mitsubishi Bank Ltd.	1,000,000	1,000,000	1,014,693	1,014,693
National Westminster Bank Ltd.	1,000,000	1,000,000	1,053,628	1,053,628
Bankers Trust Co.	176,000	176,816	179,622	179,622
	\$ 8,176,000	\$ 8,176,816	\$ 8,422,565	\$ 8,422,565
<u>Eurodollar Nassau Time Deposit</u>				
Credit Lyonnais	5,000,000	5,000,000	5,006,927	5,006,927
National Bank of North America	1,000,000	1,000,000	1,011,125	1,011,125
	6,000,000	6,000,000	6,018,052	6,018,052
<u>Eurodollar Time Deposit</u>				
Banque Francaise du Commerce Exterieur	5,000,000	5,000,000	5,007,083	5,007,083
Merrill Lynch Pierce Fenner & Smith	2,000,000	1,999,904	2,022,893	2,022,893
	7,000,000	6,999,904	7,029,976	7,029,976
<u>Certificates of Deposit</u>				
First Chicago Bank	2,000,000	2,000,000	2,064,599	2,064,599
Western National Bank	1,000	1,000	1,000	1,000
	2,001,000	2,001,000	2,065,599	2,065,599
<u>State and Municipal Securities</u>				
State of Michigan	5,000,000	5,000,000	5,000,000	5,000,000
State of Washington	1,000,000	950,000	951,570	951,570
	6,000,000	5,950,000	5,951,570	5,951,570
<u>Time Deposits</u>				
Banque Francaise du Commerce Exterieur	623,560	623,560	623,560	623,560
Benelux Bank	2,793,115	2,793,115	2,793,115	2,793,115
Credit du Nord Bank	649,561	649,561	649,561	649,561
	4,066,236	4,066,236	4,066,236	4,066,236
	\$ 33,243,236	\$ 33,193,956	\$ 33,553,998	\$ 33,553,998

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE V - PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended January 3, 1982

Classification	Balance December 28, 1980	Additions at cost	Retirements and sales	Other changes - additions (deductions)	Balance January 3, 1982
Land and improvements	\$ 9,165,641	\$ 151,018	\$ 1,788,235	\$ -	\$ 7,528,424
Buildings and building equipment	90,932,424	7,723,497	5,155,320	(55,497)(1)	93,445,104
Machinery and equipment	159,875,220	22,622,354	14,166,855	107,710 (1)	168,438,429
Automobiles and airplanes	2,294,622	187,201	143,195	-	2,338,628
Office furniture and fixtures	5,664,425	374,334	510,697	(52,213)(1)	5,475,849
Leasehold improvements	792,725	181,451	1,165	-	973,011
Construction in progress	11,906,126	7,050,505	95,584	-	18,861,047
	<u>\$280,631,183</u>	<u>\$ 38,290,360</u>	<u>\$ 21,861,051</u>	<u>-</u>	<u>\$297,060,492</u>

(1) Transfers between classifications.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE V - PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended December 28, 1980

Classification	Balance December 30, 1979	Additions at cost	Retirements and sales	Other changes - additions (deductions)	Balance December 28, 1980
Land and improvements	\$ 9,187,395	\$ 112,495	\$ 178	\$ 708,000 (2) (842,071) (1)	\$ 9,165,641
Buildings and building equipment	66,801,091	16,451,832	134,102	798,953 (1) 7,014,650 (2)	90,932,424
Machinery and equipment	118,026,565	26,967,139	3,576,986	18,462,025 (2) (3,523) (1)	159,875,220
Automobiles and airplanes	2,147,435	221,729	132,310	50,615 (2) 7,153 (1)	2,294,622
Office furniture and fixtures	4,833,900	684,661	191,280	315,005 (2) 22,139 (1)	5,664,425
Leasehold improvements	305,336	474,012	3,972	17,349 (1)	792,725
Construction in progress	19,059,997	(7,354,107)	1,008	201,244 (2)	11,906,126
	<u>\$220,361,719</u>	<u>\$ 37,557,761</u>	<u>\$ 4,039,836</u>	<u>\$ 26,751,539</u>	<u>\$280,631,183</u>

(1) Transfers between classifications.

(2) Acquisition of Cincinnati Milacron Chemicals, Inc.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE V - PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended December 30, 1979

Classification	Balance December 31, 1978	Additions at cost	Retirements and sales	Other changes - additions (deductions)	Balance December 30, 1979
Land and improvements	\$ 7,980,652	\$ 1,703,659	\$ 496,916	-	\$ 9,187,395
Buildings and building equipment	69,381,459	6,758,907	9,531,891	192,616 (1)	66,801,091
Machinery and equipment	141,785,767	14,608,525	38,367,727	-	118,026,565
Automobiles and airplanes	2,198,951	401,032	452,548	-	2,147,435
Office furniture and fixtures	5,082,358	429,008	677,466	-	4,833,900
Leasehold improvements	928,697	29,407	460,152	(192,616)(1)	305,336
Construction in progress	5,429,659	13,908,868	278,530	-	19,059,997
	<u>\$232,787,543</u>	<u>\$ 37,839,406</u>	<u>\$ 50,265,230</u>	<u>\$ -</u>	<u>\$220,361,719</u>

(1) Transfers between classifications.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE VI - ACCUMULATED DEPRECIATION AND
AMORTIZATION OF PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended January 3, 1982

Classification	Balance December 28, 1980	Charged to costs and expenses	Retirements or sales	Other changes - additions (deductions)	Balance January 3, 1982
Land and improvements	\$ 176,882	\$ 64,334	\$ -	\$ -	\$ 241,216
Buildings and building equipment	37,262,614	4,097,546	1,535,479	(5,141)(1)	39,819,540
Machinery and equipment	68,351,798	17,182,825	8,430,546	5,402 (1)	77,109,479
Automobiles and airplanes	1,511,290	304,710	126,808	-	1,689,192
Office furniture and fixtures	3,570,413	496,146	374,162	(261)(1)	3,692,136
Leasehold improvements	188,105	156,561	824	-	343,842
	<u>\$111,061,102</u>	<u>\$ 22,302,122</u>	<u>\$ 10,467,819</u>	<u>\$ -</u>	<u>\$122,895,405</u>

(1) Transfers between classifications.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE VI - ACCUMULATED DEPRECIATION AND
AMORTIZATION OF PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended December 28, 1980

Classification	Balance December 30, 1979	Charged to costs and expenses	Retirements or sales	Other changes - additions (deductions)	Balance December 28, 1980
Land and improvements	\$ 434,178	\$ 87,388	\$ -	\$ (344,684) (1)	\$ 176,882
Buildings and building equipment	33,468,818	3,545,254	95,161	343,703 (1)	37,262,614
Machinery and equipment	57,361,708	14,148,621	3,155,562	(2,969) (1)	68,351,798
Automobiles and airplanes	1,310,716	308,204	107,630	-	1,511,290
Office furniture and fixtures	3,301,476	440,756	175,769	3,950 (1)	3,570,413
Leasehold improvements	92,741	98,625	3,261	-	188,105
	<u>\$ 95,969,637</u>	<u>\$ 18,628,848</u>	<u>\$ 3,537,383</u>	<u>\$ -</u>	<u>\$111,061,102</u>

(1) Transfers between classifications.

THIKOL CORPORATION AND SUBSIDIARIES
SCHEDULE VI - ACCUMULATED DEPRECIATION AND
AMORTIZATION OF PROPERTY, PLANT AND EQUIPMENT
Fiscal year ended December 30, 1979

Classification	Balance December 31, 1978	Charged to costs and expenses	Retirements or sales	Other changes - additions (deductions)	Balance December 30, 1979
Land and improvements	\$ 313,382	\$ 120,796	\$ -	\$ -	\$ 434,178
Buildings and building equipment	32,726,839	3,501,004	2,791,349	32,324 (1)	33,468,818
Machinery and equipment	68,436,742	13,588,251	24,663,285	-	57,361,708
Automobiles and airplanes	1,454,689	260,419	404,392	-	1,310,716
Office furniture and fixtures	3,477,573	370,104	546,201	-	3,301,476
Leasehold improvements	<u>197,129</u>	<u>119,460</u>	<u>191,524</u>	<u>(32,324)(1)</u>	<u>92,741</u>
	<u>\$106,606,354</u>	<u>\$ 17,960,034</u>	<u>\$ 28,596,751</u>	<u>\$ -</u>	<u>\$ 95,969,637</u>

(1) Transfers between classifications.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE VIII - VALUATION AND QUALIFYING ACCOUNTS
Fiscal years ended January 3, 1982,
December 28, 1980 and December 30, 1979

<u>Description</u>	<u>Balance beginning of year</u>	<u>Charged to costs and expenses</u>	<u>Accounts written off</u>	<u>Other changes - additions - (deductions)</u>	<u>Balance end of year</u>
Reserve for doubtful accounts - 1981	\$1,917,994	\$1,032,788	\$ 371,253	\$ -	\$2,579,529
Reserve for doubtful accounts - 1980	\$2,304,943	\$ 11,458	\$ 441,407	\$ 43,000 (1)	\$1,917,994
Reserve for doubtful accounts - 1979	\$1,985,599	\$ 452,674	\$ 133,330	\$ -	\$2,304,943

(1) Reserve balance of Cincinnati Milacron Chemicals, Inc. at time of acquisition.

THIOKOL CORPORATION AND SUBSIDIARIES
SCHEDULE X - SUPPLEMENTARY INCOME STATEMENT INFORMATION
Applicable to Continuing Operations
For the fiscal years ended
January 3, 1982, December 28, 1980 and December 30, 1979

	<u>Charged to Costs and Expenses</u>		
	<u>1981</u>	<u>1980</u>	<u>1979</u>
Maintenance and repairs (a)	\$ 21,405,681	\$ 21,853,671	\$ 20,482,057

(a) Includes maintenance and repairs applicable to U. S. Government-owned properties of \$6,721,747, \$7,736,220 and \$7,678,519, respectively.

Item 11. Exhibits, Financial Statement Schedules and Reports on Form 8-K (continued)

(a) 3. Index to Exhibits

<u>Exhibit Number</u>	<u>Description</u>
3.	Articles of incorporation and by-laws incorporated herein by reference from page 29 of the December 28, 1980 Form 10-K (pages 30-64)
10.	Material contracts Stock Purchase Agreement between Thiokol Corporation and DSW Acquiring Corp. dated April 23, 1981 Agreement of Purchase and Sale between Thiokol Corporation and Management and Training Corporation dated December 18, 1980 Remuneration Contracts: Unfunded Supplemental Retirement Income Plan Employment Agreement 1977 Executive Stock Incentive Plan as amended through October 27, 1981 Dental Assistance Plan - Plan A Dental Assistance Plan - Plan B Dental Assistance Plan - Plan C The following remuneration plans are incorporated herein by reference from page 29 of the December 28, 1980 Form 10-K: Management Incentive Bonus (pages 65-96) Medical Reimbursement Plan (pages 97-101) Employment Agreement (pages 102-109) Split Dollar Life Insurance (pages 110-113) Supplemental Income Plan (pages 114-118) Post Retirement Life Insurance Plan (pages 119-124) Directors Deferred Compensation Plan (pages 133-136) The description of Director's fees and retainers contained on pages 5 and 6 of the company's proxy statement for the annual meeting of stockholders to be held on April 27, 1982 is incorporated by reference as an exhibit hereto.
11.	Computation of earnings per common share for each of the three fiscal years in the period ended January 3, 1982
13.	1981 Annual Report to Stockholders With the exception of the pages listed in the above index and the items referred to in Items 1, 5, 6, and 7, the 1981 Annual Report to Stockholders of Thiokol Corporation and subsidiaries is not to be deemed filed as part of this report.
22.	Listing of subsidiaries and affiliates

THIOKOL CORPORATION AND SUBSIDIARIES
Computation of Earnings Per Common Share
Three fiscal years 1981 to 1979, inclusive

EXHIBIT 11

	1981	1980	1979
Income from Continuing Operations	\$ 36,920,246	\$ 30,752,875	\$ 33,232,009
Income from Discontinued Operations	<u>192,247</u>	<u>1,614,035</u>	<u>6,854,267</u>
Net Income	<u>\$ 37,112,493</u>	<u>\$ 32,366,910</u>	<u>\$ 40,086,276</u>
Common shares:			
Average shares outstanding during the year	11,466,588	11,414,545	11,398,898
Potential net shares to be issued upon exercise of dilutive options, based on average stock prices during the year, after applying treasury stock method	62,262	79,682	56,758
Appropriate portion of contingent stock options awarded under Part A of the Executive Stock Incentive Plan	<u>82,069</u>	<u>79,347</u>	<u>81,630</u>
Maximum potential shares as to primary earnings per share	11,610,919	11,573,574	11,537,286
Additional potential net shares which affect fully diluted earnings per share to be issued upon exercise of dilutive options, based on stock prices at the end of each quarter, after applying treasury stock method	<u>1,129</u>	<u>3,287</u>	<u>7,818</u>
Maximum potential shares as to fully diluted earnings per share	<u>11,612,048</u>	<u>11,576,861</u>	<u>11,545,104</u>
Primary earnings per share as reported:			
Continuing Operations	\$ 3.18	\$ 2.66	\$ 2.88
Discontinued Operations	<u>.02</u>	<u>.14</u>	<u>.59</u>
Net Income	<u>\$ 3.20</u>	<u>\$ 2.80</u>	<u>\$ 3.47</u>
Fully diluted earnings per share:			
Continuing Operations	\$ 3.18	\$ 2.66	\$ 2.88
Discontinued Operations	<u>.02</u>	<u>.14</u>	<u>.59</u>
Net Income	<u>\$ 3.20</u>	<u>\$ 2.80</u>	<u>\$ 3.47</u>
Percentage dilution	-	-	-

